I. INTRODUCTION

1. I, Brenitra Mosley, MBA., am a senior consulting engineer, registered patent practitioner, and founder of Novitas IP Consulting, LLC. As an electrical engineer and cybersecurity engineer with over 15 years of experience in professional engineering and patent prosecution, I have provided expert opinions and consultation in matters such as patent infringement and patentability analysis. I have over 14 years of experience as a Patent Examiner at the U.S. Patent and Trademark Office and a Registered Patent Agent. During this tenure, I have been a patentability subject matter expert in inorganic/organic light-emitting diode design and manufacturing, luminescent solids and liquid materials, high-definition displays, light-emitting diode backlight displays, nanotechnology, and electrode design and manufacturing. During my graduate tenure at the University of Maryland, Baltimore County, my research focused on linear and non-linear optics. I earned her M.S., Cybersecurity and MBA from Norwich University and her B.S., Physics from Jackson State University. I have provided expert consulting for plaintiffs and defendants in patent eligibility and infringement cases.

2. A copy of my CV is attached as **Exhibit B**. My hourly billing rate for this matter is $175 per hour. My compensation does not depend on my opinions or the litigation's outcome.

3. I understand that Lead Creations, Inc. ("Lead Creation") has brought a lawsuit in the U.S. District Court for the Southern District of New York alleging that SKNSL Direct, MAXIAEON, Senrun-US, Yinghuatiyu, and Beaulyue, seller names, have infringed on Lead Creation's U.S. Patent 7,530,706 ('706 Patent"). I have been instructed by MAH Advising, LLC to act as an expert witness on behalf of Lead Creation in this action regarding light-emitting device engineering and science and patent law.

4. During my analysis, I reviewed the documents and other information listed in **Exhibit B** of this report. I reserve the right to update my opinions should more relevant information become available in the future.

II. FUNDAMENTALS OF LIGHT-EMITTING DEVICES, CONVEX LENS, AND FOCAL POINT

1. A light-emitting diode (LED) is a solid-state semiconductor device. The device is mainly related to a computer chip rather than traditional lightbulbs. The semiconductor device's chemical structure is introduced to impurities by doping, changing its electrical properties. Using the doping process to introduce various materials at different locations of the semiconductor, junctions are formed between two areas of differently doped material.
2. As in a diode, the junction allows electrical current to flow unidirectional, in one direction, but not the other. In the case of an LED, light is only emitted when the device is forward-biased. Forward biasing means voltage is applied across a diode, allowing current to flow easily. LEDs

are fabricated to emit various colors of light. The color of the light emitted from an LED is determined by the type of semiconductor material(s) and impurities used to form the junction.

3. The light from an LED can be focused to illuminate areas. This is achieved with a lens that focuses the light on a particular focal point. Various lenses can achieve focusing the LED light; for this discussion, highlight a convex lens. A convex lens has a thicker center than the edges, as shown in Figure 1.

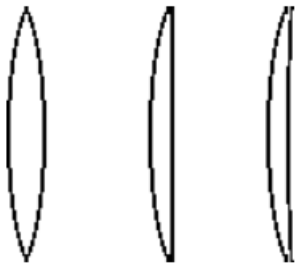


Figure 1

A convex lens's focal point is where light rays parallel to the axis are brought to a point. The lens's focal length is the distance from the lens to this point, see Figure 2.

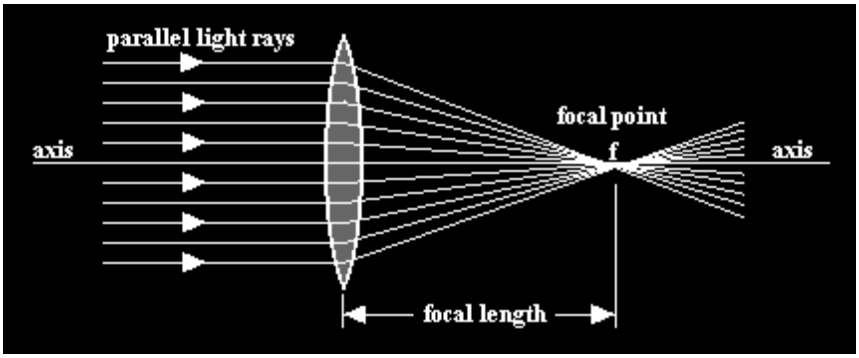


Figure 2

Figure 2 shows light rays bending at the center of the lens. This is only for illustration; however, scientifically, the rays bend once upon entering the lens and a second time upon exiting the lens. The focal point can be adjusted by moving the lens along the direction of the parallel light rays.

4. A convex lens can also diverge light rays entering and exiting a convex lens. The light rays bend until they emerge parallel to the axis; the point where this happens is the focal point, see Figure 3. If the light rays start at the focal point, pass through the focal point, or look to the lens like it starts at the focal point, the light rays will bend until they are parallel to the axis.

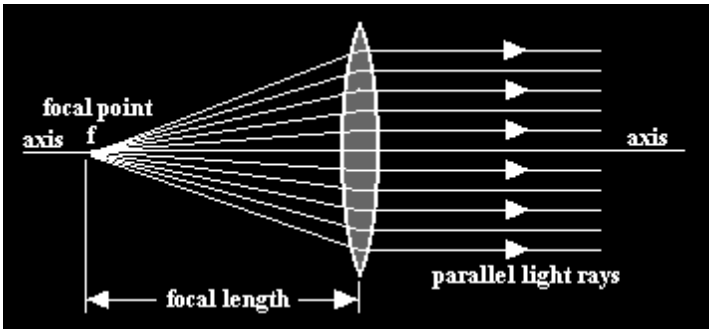


Figure 3

5. A convex lens has two focal points on either side of the lens and is equal distances from the lens.

III. SUMMARY OF CONCLUSIONS

1. Lead Creation '706 Patent was issued on 12 May 2009, with a filing date of 25 August 2006 and a foreign priority date for China of July 2004.
2. SKNSL Direct 1200000 High Lumens Flashlight and 100000 Lumens LED Flashlight appear to infringe on Lead Creation '706 Patent Claim 1.
3. MAXIAEON SUPER-BRIGHT: 2000 lumen (max) LED Flashlight appears to infringe on Lead Creation '706 Patent.
4. Senrun-US P70S Flashlight and P90 Flashlight appear to infringe on Lead Creations '706 Patent.
5. Yinghuatiyu XHP70.2 LED Flashlight and XHP90 LED Flashlight appear to infringe on Lead Creations '706 Patent.
6. Beaulyue Betgod LED Flashlight appears to infringe on Lead Creations '706 Patent.

IV. '706 PATENT CLAIM ANALYSIS AND INFRINGEMENT

1. The asserted claim of the '706 Patent is Claim 1, a light-emitting diode (LED) light apparatus.
2. Claim 1 is laid out below:

A light-emitting diode (LED) lighting apparatus, comprising:

a main body having a power source;

a light-emitting diode electrically connected with the power source and positioned at a front end of the main body, the light-emitting diode emitting light beams;

a collar coaxially coupled to the main body;

a convex lens coupled to the collar and optically coupled to the light-emitting diode in coaxially displaceable manner relative thereto, the convex lens defining a predetermined focal length, said convex lens being selectively displaced between a first range and a second range, said first range being from the light-emitting diode to a first position offset from the light-emitting diode by the predetermined focal length, said second range being from the first position to a second position offset from the light emitting diode by twice the predetermined focal length; and

at least one of said main body and collar having a pair of annular engagement portions axially offset from the other for releasably locking said collar to the main body to locate the convex lens respectively in said first range and second range;

whereby a brightness of the light is optimally maintained for a greater range of illumination when the convex lens in said second range than in said first range.

3. The alleged devices from the sellers mentioned above will be compared to each limitation of Claim 1 to show direct infringement.
4. Figure 4, taken from SKNSL Amazon market page (https://www.amazon.com/dp/B0B5N82BF6) shows the flashlight directly infringing on '706 Patent. The following claim charts will indicate the details of limitation matching to show infringement.

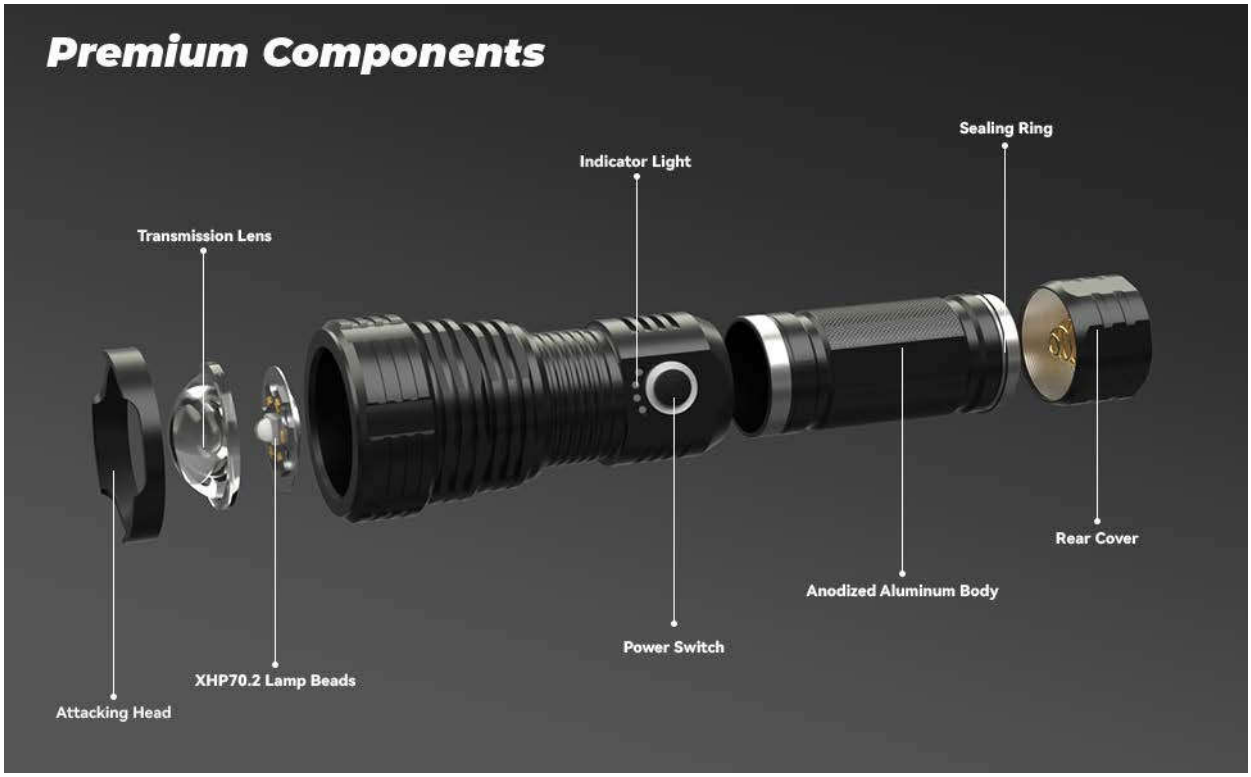
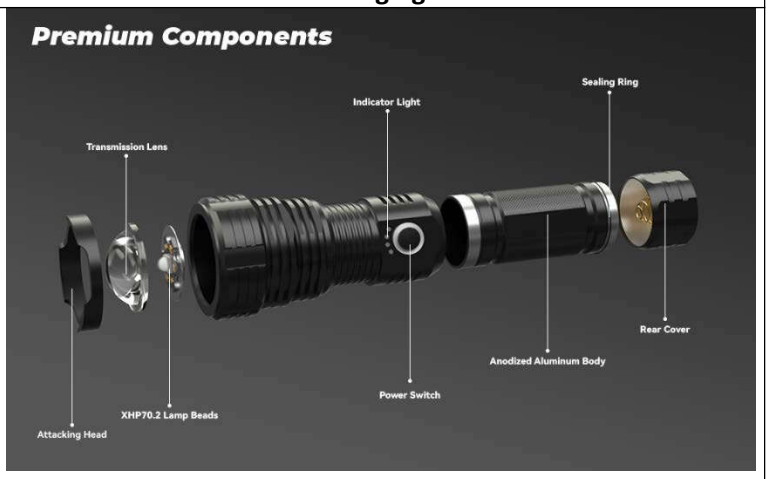
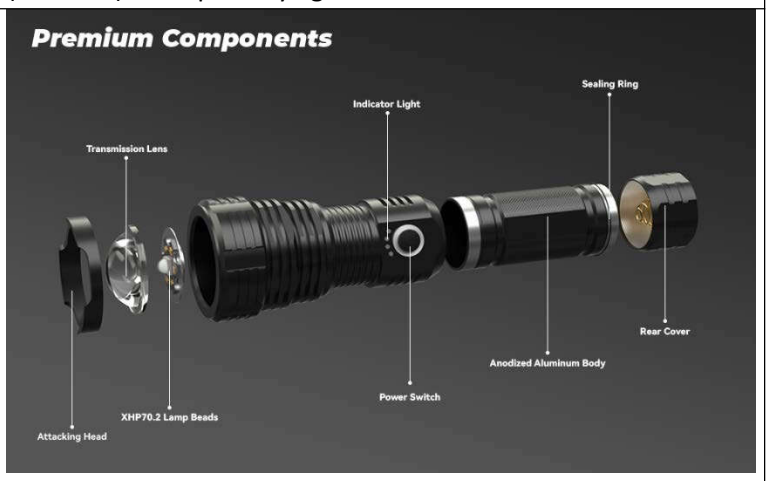
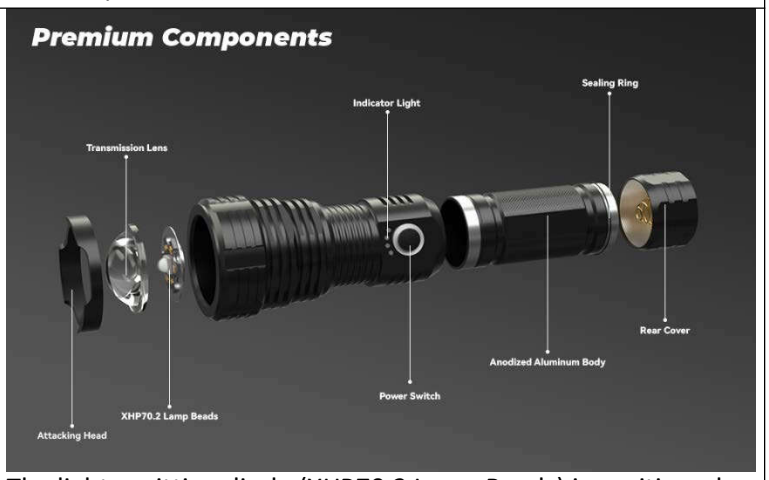
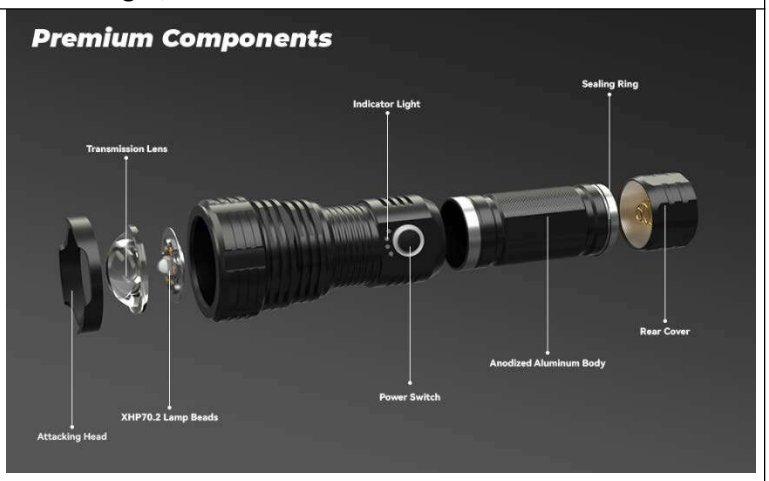
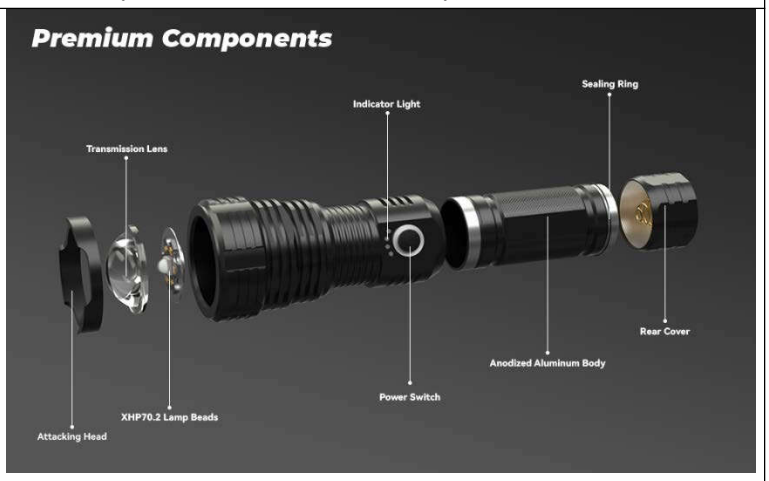
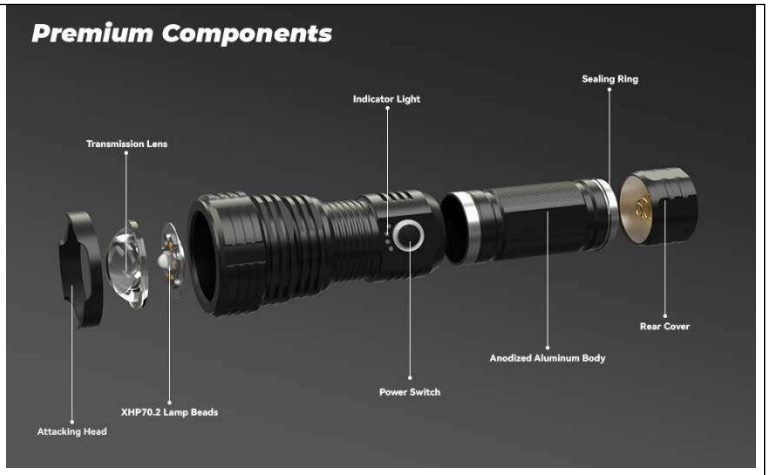


Figure 4

'706 Patent Claim 1	SKNSL Infringing Product
1(a) A light-emitting diode (LED) lighting apparatus, comprising	 The flashlight (light apparatus) has a light-emitting diode (XHP70.2) as its primary light source.
1(b) a main body having a power source	 The rear cover, as shown, encloses the battery section for the source of the flashlight's power. As indicated on the seller's Amazon page, the specification of the power source (battery cell composition) is NiCAD.
1(c) a light-emitting diode electrically connected with the power source and positioned at a front end of the main body, the light-emitting diode emitting light beams	 The light-emitting diode (XHP70.2 Lamp Beads) is positioned

	on the front end of the flashlight and electrically coupled to the rear cover housing the battery source. It is noted that the additional components that electrically couple the light-emitting diode to the power source are within the cover of the flashlight, not shown.
1(d) a collar coaxially coupled to the main body	 The collar (outlined in the orange box) is coaxially coupled to main body (Anodized Aluminum Body)
1(e) a convex lens coupled to the collar and optically coupled to the light-emitting diode in coaxially displaceable manner relative thereto	 The transmission lens is a convex lens, as indicated in the picture. It is coupled to the collar (outlined in the orange box). Additionally, on the seller's Amazon page, the light emitted from the flashlight can be either a floodlight or a flashlight. This is achieved by changing the focal point of the lens
1(f) the convex lens defining a predetermined focal length	

	 The seller's Amazon page states, "This brightest flashlight has a zoomable function, you can change the range and focal length of the flashlight by pushing and pulling the head of the flashlight according to your needs." Upon first use of the flashlight, the convex lens (transmission lens) is at a predetermined (set) focal length before the user adjusts the focal length.
1(g) said convex lens being selectively displaced between a first range and a second range, said first range being from the light-emitting diode to a first position offset from the light-emitting diode by the predetermined focal length, said second range being from the first position to a second position offset from the light emitting diode by twice the predetermined focal length	 The seller's Amazon page states, "This brightest flashlight has a zoomable function, you can change the range and focal length of the flashlight by pushing and pulling the head of the flashlight according to your needs." Upon first use of the flashlight, the convex lens (transmission lens) is at a predetermined (set) focal length before the user adjusts the focal length. The zoom-out and zoom-in features move the lens's focal length by physically displacing the convex lens to different positions (different ranges).
1(h) at least one of said main body and collar having a pair of annular engagement portions axially offset from the other for reasonably locking said collar to the main body to locate	

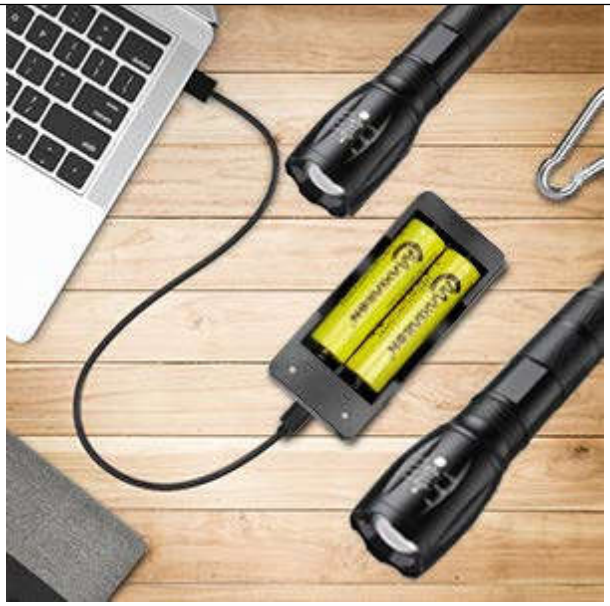
the convex lens respectively in said first range and second range.	 The main body (outlined in the orange box) has annular engagement portions (green box and yellow box) that locks the collar (Attacking Head) to the main body. The convex lens (transmission lens) is within the main body.  The first and second range is achieved by the zoom out and zoom in feature of moving the convex lens.
1(i) whereby a brightness of the light is optimally maintained for a greater range of illumination when the convex lens in said second range than in said first range.	 The flashlight is a floodlight (zoom out) or spotlight (zoom in). The illumination is spread across a wider area when the convex lens is in the floodlight position. When the convex lens

	is in the zoom-in position, the light is brighter, and the range of illumination is greater (longer distance). The zoom-in position is the second range of the convex lens from the LED.

5. Figure 5, taken from MAXIAEON Amazon market page (https://www.amazon.com/dp/B07SQLRMQH) shows the flashlight directly infringing on '706 Patent. The following claim charts will indicate the details of limitation matching to show infringement.

Figure 5

'706 Patent Claim 1	SKNSL Infringing Product
1(a) A light-emitting diode (LED) lighting apparatus, comprising	 The flashlight (light apparatus) has a light-emitting diode as its primary light source. On the seller's Amazon page, it is indicated that the light source is a light-emitting diode.

1(b) a main body having a power source	  As shown from the seller's Amazon page, there is a main body that encloses the battery section for the source of the flashlight's power. As the seller's Amazon page stated, "The LED flashlight comes with a rechargeable high-capacity 18650 Battery."
1(c) a light-emitting diode electrically connected with the power source and positioned at a front end of the main body, the light-emitting diode emitting light beams	

	 As shown in the picture above, the LED is positioned on the front end of the flashlight and electrically coupled to the rear cover housing the battery source. It is noted that the additional components that electrically couple the light-emitting diode to the power source are within the cover of the flashlight, not shown.
1(d) a collar coaxially coupled to the main body	

	 The collar (outlined in the purple box) is coaxially coupled to main body (outlined in blue box)
1(e) a convex lens coupled to the collar and optically coupled to the light-emitting diode in coaxially displaceable manner relative thereto	 Although not explicitly shown in the diagram, as explained in Section II, the zoom capabilities (indicated in the diagram and indicated on the seller's Amazon page) are achieved by a lens optically coupled to the light-emitting diode. Additionally, on the seller's Amazon page, the light emitted from the flashlight can be in 5 different modes, including high and medium beams. This is achieved by changing the focal point of the lens.
1(f) the convex lens defining a predetermined focal length	The seller's Amazon page indicates versatile lighting modes. The mode can be changed from medium to high modes, as

	one example. Upon first use of the flashlight, the convex lens is at a predetermined (set) focal length before the user adjusts the focal length.
1(g) said convex lens being selectively displaced between a first range and a second range, said first range being from the light-emitting diode to a first position offset from the light-emitting diode by the predetermined focal length, said second range being from the first position to a second position offset from the light emitting diode by twice the predetermined focal length	 The seller's Amazon page indicates that the flashlight has zoomable functionality. This is achieved when the user changes the range and focal length of the flashlight by pushing and pulling the head of the flashlight. Upon first use of the flashlight, the convex lens is at a predetermined focal length before the user adjusts the focal length. The zoom-out and zoom-in features move the lens's focal length by physically displacing the convex lens to different positions (different ranges). *Note that the seller's Amazon page has videos showing the zoom functionality. *
1(h) at least one of said main body and collar having a pair of annular engagement portions axially offset from the other for reasonably locking said collar to the main body to locate the convex lens respectively in said first range and second range.	

The main body (outlined in blue box) has annular engagement portions (orange box and green box) that locks the collar to the main body. The convex lens is within the main body.

	The first and second range is achieved by the zoom out and zoom in feature of moving the convex lens.
1(i) whereby a brightness of the light is optimally maintained for a greater range of illumination when the convex lens in said second range than in said first range.	 The versatile lighting modes and zoom features change to create the illumination spread across a wider area when the convex lens is in a preset zoom mode. When the convex lens is triggered to zoom in, the light is brighter, and the range of illumination is greater (longer distance). The zoom-in position is the second range of the convex lens from the LED.

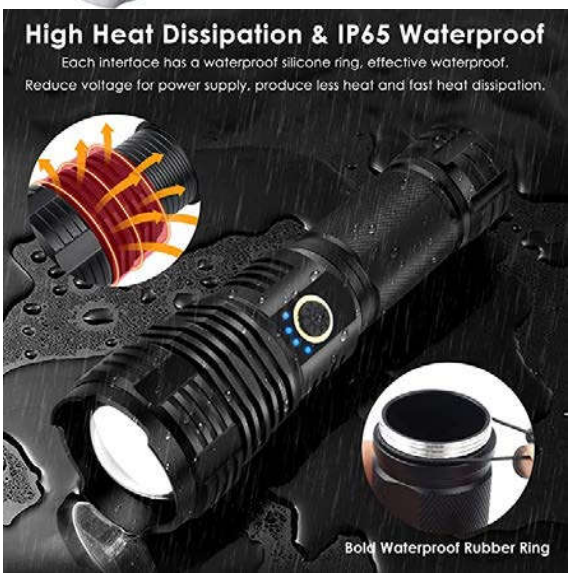
6. Figure 6, taken from Senrun-US Amazon market page (https://www.amazon.com/dp/B092V38RDN) shows the flashlight directly infringing on '706 Patent. The following claim charts will indicate the details of limitation matching to show infringement.

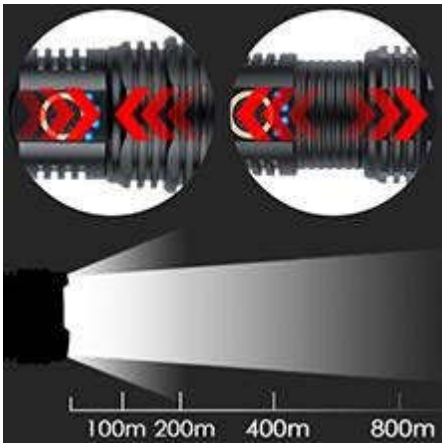
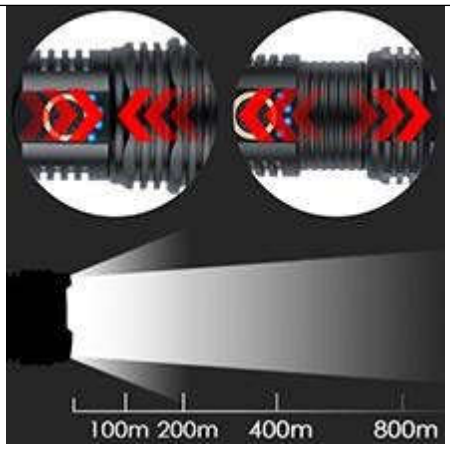
Figure 6

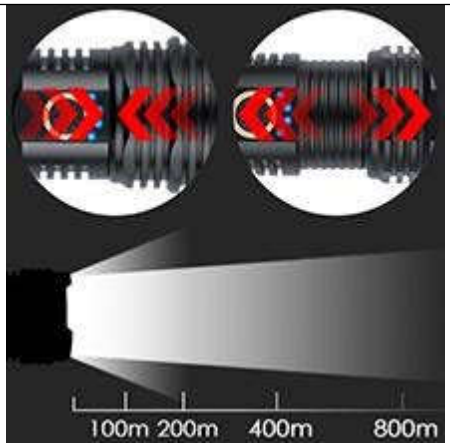
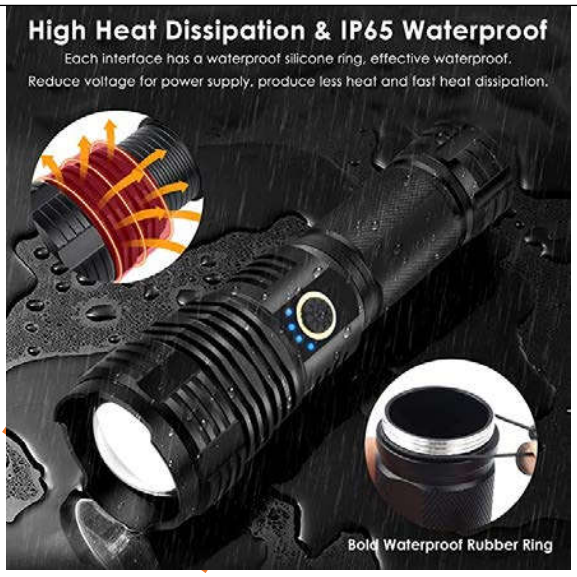
'706 Patent Claim 1	**SKNSL Infringing Product**
1(a) A light-emitting diode (LED) lighting apparatus, comprising	

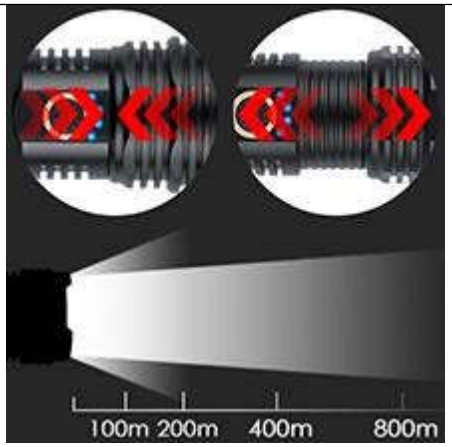
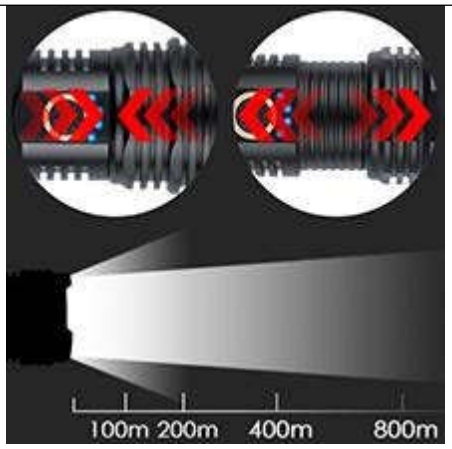
	 The flashlight (light apparatus) has a light-emitting diode as its primary light source. The seller's Amazon page states, "High powered flashlight is built-in advanced XHP70.2 LED chip."
1(b) a main body having a power source	 The rear of the flashlight, as shown, encloses the battery section for the source of the flashlight's power (main body outlined in blue). As indicated on the seller's Amazon page, the specifications of the power source (battery cell composition) are Lithium ion.
1(c) a light-emitting diode electrically connected with the power source and positioned at a front end of the main body, the light-emitting diode emitting light beams	

	  The light-emitting diode (XHP70.2 LED) are positioned on the front end of the flashlight and electrically coupled to the rear cover housing the battery source. It is noted that the additional components that electrically couple the light-emitting diode to the power source are within the cover of the flashlight, not explicitly shown in the diagram.
1(d) a collar coaxially coupled to the main body	

	 The collar (outlined in the orange box) is coaxially coupled to main body (outlined in blue)
1(e) a convex lens coupled to the collar and optically coupled to the light-emitting diode in coaxially displaceable manner relative thereto	  Although not explicitly shown in the diagram, as explained in

	Section II, the zoom capabilities (indicated in the diagram and indicated on the seller's Amazon page) are achieved by a lens optically coupled to the light-emitting diode. Additionally, on the seller's Amazon page, the light emitted from the flashlight is zoomable by stretching the flashlight (the convex lens) to adjust the focal length. 
1(f) the convex lens defining a predetermined focal length	 The seller's Amazon indicates that the user can get the required spot beam and flood beam by stretching the flashlight (moving the convex lens) to adjust the focal length. This is shows as well where the seller indicated a predetermined length with the measurement in the above image from the seller's Amazon page.
1(g) said convex lens being selectively displaced between a first range and a second range, said first range being from the light-emitting diode to a first position offset from the light-emitting diode by the predetermined focal length, said second range being from the first position to a second position offset from the light emitting	

diode by twice the predetermined focal length	 As previously stated, the seller's Amazon indicates that the user can get the required spot beam and flood beam by stretching the flashlight (moving the convex lens) to adjust the focal length. This is shows as well where the seller indicated a predetermined length with the measurement in the above image from the seller's Amazon page.
1(h) at least one of said main body and collar having a pair of annular engagement portions axially offset from the other for reasonably locking said collar to the main body to locate the convex lens respectively in said first range and second range.	 The collar (outlined in the orange box) has annular engagement portions (green box and yellow box) that locks the collar to the main body. The convex lens (transmission lens) is within the collar.

	 The first and second range is achieved by the zoom out and zoom in feature of moving the convex lens.
1(i) whereby a brightness of the light is optimally maintained for a greater range of illumination when the convex lens in said second range than in said first range.	 The flashlight is a floodlight (zoom out) or spotlight (zoom in). The illumination is spread across a wider area when the convex lens is in the floodlight position. When the convex lens is in the zoom-in position, the light is brighter, and the range of illumination is greater (longer distance). The zoom-in position is the second range of the convex lens from the LED.

7. Figure 7, taken from Yinghuatiyu Amazon market page (https://www.amazon.com/dp/B09HBCKC91) shows the flashlight directly infringing on '706 Patent. The following claim charts will indicate the details of limitation matching to show infringement.

Figure 7

'706 Patent Claim 1	**SKNSL Infringing Product**
1(a) A light-emitting diode (LED) lighting apparatus, comprising	

	 The flashlight (light apparatus) has a light-emitting diode as its primary light source. On the seller's Amazon page, it is indicated that the light source is a light-emitting diode (CREE XHP70.2).
1(b) a main body having a power source	  As shown from the seller's Amazon page, there is a main body

	(outlined in the blue box) that encloses the battery section for the source of the flashlight's power. As the seller's Amazon page indicates a lithium battery for source of power.
1(c) a light-emitting diode electrically connected with the power source and positioned at a front end of the main body, the light-emitting diode emitting light beams	 The light-emitting diode (CREE XHP70.2 LED) is positioned on the front end of the flashlight and electrically coupled to the rear cover housing the battery source. It is noted that the additional components that electrically couple the light-emitting diode to the power source are within the cover of the flashlight, not explicitly shown in the diagram
1(d) a collar coaxially coupled to the main body	 The collar (outlined in the purple box) is coaxially coupled to main body (outlined in blue box)
1(e) a convex lens coupled to the collar and optically coupled to the light-emitting diode in coaxially displaceable manner relative thereto	

	 Although not explicitly shown in the diagram, as explained in Section II, the zoom capabilities (indicated in the diagram and indicated on the seller's Amazon page) are achieved by a lens optically coupled to the light-emitting diode. Additionally, on the seller's Amazon page, it is stated, "Amzyigou rechargeable flashlights high lumens is with a convex lens and a telescopic head. Stretch to expand the irradiation distance and pull back to expand the irradiation range." This is achieved by changing the focal point of the lens.
1(f) the convex lens defining a predetermined focal length	 The seller's Amazon page states, "Amzyigou rechargeable flashlights high lumens is with a convex lens and a telescopic head. Stretch to expand the irradiation distance and pull back to expand the irradiation range." This is achieved by changing the focal point of the lens.
1(g) said convex lens being selectively	

displaced between a first range and a second range, said first range being from the light-emitting diode to a first position offset from the light-emitting diode by the predetermined focal length, said second range being from the first position to a second position offset from the light emitting diode by twice the predetermined focal length	 The seller's Amazon page indicates that the flashlight has telescopic zoomable capabilities. This is achieved when the user changes the range and focal length of the flashlight by pushing and pulling the head of the flashlight. Upon first use of the flashlight, the convex lens is at a predetermined focal length before the user adjusts the focal length. Additionally, on the seller's Amazon page, it is stated, "Amzyigou rechargeable flashlights high lumens is with a convex lens and a telescopic head. Stretch to expand the irradiation distance and pull back to expand the irradiation range." This is achieved by changing the focal point of the lens. Additionally, the seller indicates that the focus can be selected between spot and flood beams. *Note that the seller's Amazon page has videos showing the zoom functionality. *
1(h) at least one of said main body and collar having a pair of annular engagement portions axially offset from the other for reasonably locking said collar to the main body to locate the convex lens respectively in said first range and second range.	 The collar (outlined in blue box) has annular engagement

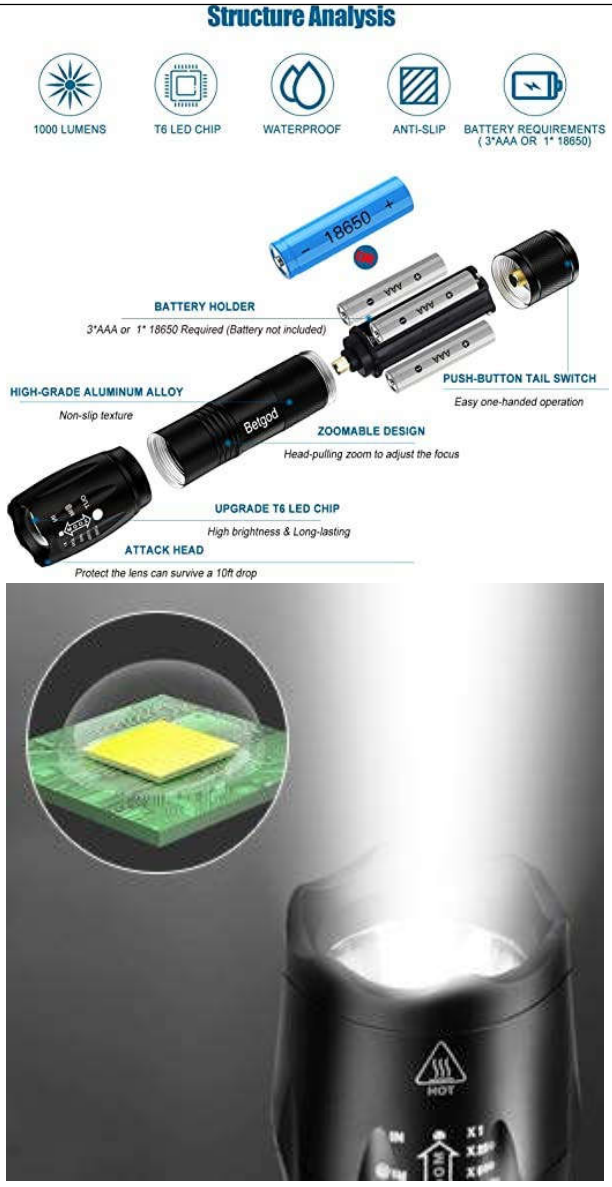
	portions (orange box and green box) that locks the collar to the main body. The convex lens is within the main body.  The first and second range is achieved by the zoom out and zoom in feature of moving the convex lens.
1(i) whereby a brightness of the light is optimally maintained for a greater range of illumination when the convex lens in said second range than in said first range.	 As stated on the seller's Amazon page "With a telescopic zoom, you can select focus between spot and flood beams. Zoom out the led rechargeable flashlight to gather light up to 1000 meters and zoom in to increase the illuminated area and get the highest brightness of 90000lm." Additionally, the seller's Amazon page states, "Amzyigou rechargeable flashlights high lumens is with a convex lens and a telescopic head. Stretch to expand the irradiation distance and pull back to expand the irradiation range."

8. Figure 8, taken from MAXIAEON Amazon market page (https://www.amazon.com/dp/B07SQLRMQH) shows the flashlight directly infringing on '706 Patent. The following claim charts will indicate the details of limitation matching to show infringement.

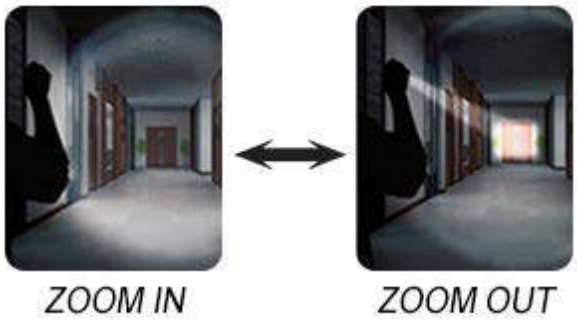
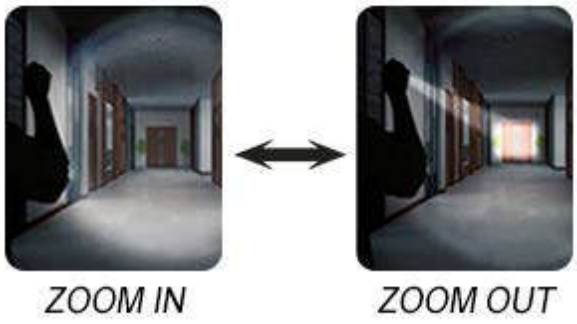
Figure 8

'706 Patent Claim 1	SKNSL Infringing Product
1(a) A light-emitting diode (LED) lighting apparatus, comprising	 The flashlight (light apparatus) has a light-emitting diode as its primary light source. On the seller's Amazon page, it is

	indicated that the light source is a light-emitting diode (LED).
1(b) a main body having a power source	 As shown from the seller's Amazon page, there is a main body (outlined in blue box) that encloses the battery section for the source of the flashlight's power.
1(c) a light-emitting diode electrically connected with the power source and positioned at a front end of the main body, the light-emitting diode emitting light beams	

	 As shown in the picture above, the LED is positioned on the front end of the flashlight and electrically coupled to the rear cover housing the battery source. The seller's Amazon page states, "with upgrade CREE T6 LED Chip, brighter than basic flashlight high lumens."
1(d) a collar coaxially coupled to the main body	

	 The collar (outlined in the red box) is coaxially coupled to main body (outlined in blue box)
1(e) a convex lens coupled to the collar and optically coupled to the light-emitting diode in coaxially displaceable manner relative thereto	 Although not explicitly shown in the diagram, as explained in Section II, the zoom capabilities (indicated in the diagram and indicated on the seller's Amazon page) are achieved by a lens optically coupled to the light-emitting diode. Additionally, on the seller's Amazon page, the flashlight is capable of adjustable focus. This is achieved by changing the focal point of the lens.
1(f) the convex lens defining a predetermined focal length	

	  The seller's Amazon page states, "Adjustable focus to get spotlight or flood light that you need (Head-pulling zoom to adjust fully zoomable from wide to narrow beam." Upon first use of the flashlight, the convex lens is at a predetermined (set) focal length before the user adjusts the focal length.
1(g) said convex lens being selectively displaced between a first range and a second range, said first range being from the light-emitting diode to a first position offset from the light-emitting diode by the predetermined focal length, said second range being from the first position to a second position offset from the light emitting diode by twice the predetermined focal length	  The seller's Amazon page indicates that the flashlight has zoomable functionality. This is achieved when the user changes the range and focal length of the flashlight by pushing and pulling the head of the flashlight. Upon first use of the flashlight, the convex lens is at a predetermined focal length before the user adjusts the focal length. The zoom-out and zoom-in features move the lens's focal length by physically

	displacing the convex lens to different positions (different ranges).
1(h) at least one of said main body and collar having a pair of annular engagement portions axially offset from the other for reasonably locking said collar to the main body to locate the convex lens respectively in said first range and second range.	 The collar (outlined in blue box) has annular engagement portions (orange box and green box) that locks the collar to the main body. The convex lens is within the main body.   The first and second range is achieved by the zoom out and zoom in feature of moving the convex lens.
1(i) whereby a brightness of the light is optimally maintained for a greater range of illumination when the convex lens in said second range than in said first range.	

	  The adjustable focus (zoom in and zoom out) allows for capabilities of greater range of illumination. When the convex lens is triggered to zoom out the range of illumination is greater (longer distance). The zoom-in position is the second range of the convex lens from the LED.

I declare that the foregoing is true and correct. I executed in Dallas, Texas, on 06 December 2022.

X _____
Brenitra Lee (Dec 6, 2022 18:27 CST)
Brenitra Mosley

Expert Delc

Final Audit Report 2022-12-08

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